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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/590,279 | 08/22/2006 | Koji Sumi | Q96659 | 8069 |
| 72875 7590 10/21/2009 SUGHRUE MION, PLLC 2100 Pennsylvania Avenue, N.W. Washington, DC 20037 | | | | |
| EXAMINER DOUGHERTY, THOMAS M | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 2837 | | | | |
| NOTIFICATION DATE | | DELIVERY MODE | | |
| 10/21/2009 | | ELECTRONIC | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@sughrue.com
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Office Action Summary

Application No.

10/590,279

Applicant(s)

SUMI, KOJI

Examiner

Thomas M. Dougherty

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 2,3 and 6-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4 and 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S506)
- Paper No(s)/Mail Date 8/22/06, 8/29/08

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Election

Claim 1 is necessarily rejoined by the Examiner since the elected claims depend on it.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 4 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Sun et al. (US 2001/0016229). Regarding claim 1, Sun et al. teach a composite for forming a ferroelectric thin film made of a colloidal solution applicable to the metal organic deposition method containing an organometallic compound including metal constituting a ferroelectric thin film, (see claim 1, note also in claim 1 that the 'solution' at line 7 of the claim refers to a colloidal solution; Sun et al. indicate at paragraph 11 that 'solution' means 'colloidal solution') comprising: at least water (see paragraph 43) other than water of crystallization in the organometallic compound.

Regarding claim 4, Sun et al. note in their TITLE and ABSTRACT that they make a ferroelectric thin film made of the composite for forming a ferroelectric thin film according to the above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sun et al. (US 2001/0016229) in view of Murai (US 2002/0123158). Given the invention of Sun et al. as noted above, he doesn't not a piezoelectric element using the claimed film as a piezoelectric actuator that ejects a liquid.

Murai notes a composite ferroelectric thin film (see TITLE) for use as an actuator for an INK JET RECORDING HEAD, ergo his element is intended for use as a liquid-jet head comprising: a piezoelectric element including the ferroelectric thin film as a piezoelectric actuator that ejects a liquid.

Murai doesn't note that his invention includes the methodology of that noted by Sun.

It would have been obvious to one having ordinary skill in the art to employ the method for forming a ferroelectric thin film, as noted by Sun et al., made of a colloidal solution applicable to the metal organic deposition method containing an organometallic compound including metal constituting a ferroelectric thin film, comprising: at least water other than water of crystallization in the organometallic compound, in the device of Murai, since Sun's et al. device don't deteriorate to the degree of the prior art due to voltage stress, pulse, polarization inversion and temperature. See paragraph 8 of Sun et

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al. as well as paragraph 9, which is the first paragraph under the SUMMARY OF THE INVENTION heading for more advantages.

Direct inquiry to Examiner Dougherty at (571) 272-2022.

/T. M. D./

/Thomas M. Dougherty/

tmd

Primary Examiner, Art Unit 2837

October 15, 2009